ENGINEERED PERFORMANCE STANDARDS

BOOK NUMBER - 13

TRACKAGE

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These tasks are for the manual method of replaceing grade or switch ties. Includes: raise & lower track per 1/2 rail & raise every 5 ties,hand work to pull & reinsert tie under rails;
*D = distribute new & collect used ties along right of way by crane/sling/tongs/hand load as reqd.to truck/flat car/ stock/dump.
*r = SPIKES REMOVE WITH - (CLAW BAR or HYDREJECTOR)
*d = SPIKES DRIVE WITH - (MAUL or AIR/or HYDRAULIC HAMMER)
Ballast tamping using air or electric hand tampers, dress 1.6ft. of ballast per tie.

TASK TIME STANDARDS LISTING

ZAT001	(replace)grade ties	.	*r CLAW BAR	*d MAUL
ZAT005	(replace)grade ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT009	(replace)grade ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT013	(replace)grade ties	.	*r HYDREJECTOR	*d MAUL
ZAT017	(replace)grade ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT021	(replace)grade ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT002	(replace)grade ties	*D	*r CLAW BAR	*d MAUL
ZAT006	(replace)grade ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT010	(replace)grade ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT014	(replace)grade ties	*D	*r HYDREJECTOR	*d MAUL
ZAT018	(replace)grade ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT022	(replace)grade ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT003	(replace)switch ties	.	*r CLAW BAR	*d MAUL
ZAT007	(replace)switch ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT011	(replace)switch ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT015	(replace)switch ties	.	*r HYDREJECTOR	*d MAUL
ZAT019	(replace)switch ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT023	(replace)switch ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT004	(replace)switch ties	*D	*r CLAW BAR	*d MAUL
ZAT008	(replace)switch ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT012	(replace)switch ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT016	(replace)switch ties	*D	*r HYDREJECTOR	*d MAUL
ZAT020	(replace)switch ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT024	(replace)switch ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER

ZAT 001 Remove/install grade ties using hand tools.(Includes)Raise/lower track,per 1/2" rail lengh.Remove grade tie;pull spikes crow bar manually pull tie from under rails, per tie.Install grade tie; pull tie under rails manually.Drive spikes in tie with maul, pe tie.Tamp ballast with hand electric or air tamper,per grade tie Dress ballast,per ft. of track,1.6 ft. of track per tie.9-1987

000.65580 hours per ties to be removed and installed

ZAT 005 Remove/install N grade ties w hand tools,spikes driven w air hammer.Raise/lower track,per 1/2 rail length.Rail raised every ties.Remove grade tie;pull spikes w claw bar,man. pull tie from under rails,per tie.Install grade tie;pull tie under rails man. Drive spikes w air hammer,per tie.Dress ballast,per ft. of trac 1.6ft.of track per tie.10-1987

000.62530 hours per ties to be removed and reinstalled

ZAT 009 Remove and reinstall N grade ties using hand tools, spikes driven with hydraulic hammer.

000.56520 hours per ties to be removed and reinstalled

ZAT 013 Remove and reinstall N grade ties using hand tools, spikes removed with hydraulic spike remover.

000.64550 hours per ties to be removed and reinstalled

ZAT 017 Remove and reinstall N grade ties using hand tools, spikes pulled with hydraulic spike remover, spikes driven with air hammer.

000.61500 hours per ties to be removed and reinstalled

ZAT 021 Remove and reinstall N grade ties using hand tools, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer.

000.55490 hours per ties to be removed and reinstalled

ZAT 002 Remove/install N grade ties using hand tools,load/distribute new ties,load/unload old ties.Deliver new grade ties along right of way.Load w crane/sling.Unload hand.Raise/lower track,per 1/2rai length.Rail raised every 5 tie.Remove grade tie;pull spikes wit claw bar,manually pull tie from under rails,per tie.Install tie pull tie under rails manually.Drive spikes with maul,per tie.

000.70830 hours per ties to be removed and reinstalled

ZAT 006 Remove and reinstall N grade ties using hand tools, spikes driven with air hammer, load and distribute new ties, load and unload old ties.Task Area Discription for operations in detail.

000.67780 hours per ties to be removed and reinstalled

ZAT 010 Remove and reinstall N grade ties using hand tools, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.

000.61770 hours per ties to be removed and reinstalled

ZAT 014 Remove and reinstall N grade ties using hand tools, spikes removed with hydraulic spike puller, load and distribute new ties, load and unload old ties.

000.69800 hours per ties to be removed and reinstalled

ZAT 018 Remove and reinstall N grade ties using hand tools, spikes pulled with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

000.66750 hours per ties to be removed and reinstalled

ZAT 022 Remove and reinstall N grade ties using hand tools, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.

000.60740 hours per ties to be removed and reinstalled

ZAT 003 Remove/install N switch ties using hand tools.(Includes)Raise /lower track,per 1/2 rail length.Rail raised every 5 ties.Remov switch tie,pull spikes w claw bar,man. pull tie from under rail per tie.Install switch tie,pull tie under rails man.drive spike w maul,per tie.Tamp ballast w hand electric/air tamper;per grad tie.1 switch tie = to 1.5 grade ties.Dress ballast,per ft track

001.28320 hours per ties to be removed and reinstalled

ZAT 007 Remove/install N switch ties w hand tools,spikes driven w air hammer.Raise/lower track,per1/2 length.Rail raised every 5 ties Remove switch tie,pull spikes w bar,man. pull tie from under rails,per tie.Install switch tie,pull tie under rails manually, drive spikes in tie with air hammer,per tie.Tamp ballast w hand electric or air tamper;per grade tie.1 switch tie=1.5 grade tie

001.22470 hours per ties to be removed and reinstalled

ZAT 011 Remove and reinstall N switch ties using hand tools, spikes driven with hydraulic hammer.

001.12860 hours per ties to be removed and reinstalled

ZAT 015 Remove and reinstall N switch ties using hand tools, spikes pulled with hydraulic spike remover.

001.24620 hours per ties to be removed and reinstalled

ZAT 019 Remove and reinstall N switch ties using hand tools, spikes pulled with hydraulic spike remover, spikes driven with air hammer.

001.18770 hours per ties to be removed and reinstalled

ZAT 023 Remove and reinstall N switch ties using hand tools, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer.

001.09160 hours per ties to be removed and reinstalled

ZAT 004 Remove/install N switch ties w hand tools,load/deliver ties,load unload old ties.Load w crane & sling,unload hand by hand,per ti Raise/lower track,per 1/2 rail length,

001.45170 hours per ties to be removed and reinstalled

ZAT 008 Remove and reinstall N switch ties using hand tools, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

001.36700 hours per ties to be removed and reinstalled

ZAT 012 Remove and reinstall N switch ties using hand tools, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.

001.29660 hours per ties to be removed and reinstalled

ZAT 016 Remove and reinstall N switch ties using hand tools, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.

001.41420 hours per ties to be removed and reinstalled

ZAT 020 Remove and reinstall N switch ties using hand tools, spikes pulled with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

001.33000 hours per ties to be removed and reinstalled

ZAT 024 **Remove and reinstall N switch ties using hand tools, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.**

001.25960 hours per ties to be removed and reinstalled

TIES (replace)w/ CABLE-ASSISTED type mechanical tie puller & installer

These task are for the Cable Assisted type Mechanized Equipment method of replacing grade or switch ties. Includes: raise & lower track per 1/2 rail & raise every 5 ties, cable assisted pull & reinsert ties under rails;
*D = distribute new & collect used ties along right of way by crane/sling/tongs/hand load as reqd. to truck/flat car/stock/dump.
*r = SPIKES REMOVED WITH - (CLAW BAR or HYDREJECTOR)
*d = SPIKES DRIVE WITH - (MAUL or AIR/or HYDRAULIC HAMMER)
Ballast tamping using air or electric hand tampers, Dress 1.6ft. of ballast per tie.

TASK TIME STANDARDS LISTING

ZAT025	(replace)grade ties	.	*r CLAW BAR	*d MAUL
ZAT029	(replace)grade ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT033	(replace)grade ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT037	(replace)grade ties	.	*r HYDREJECTOR	*d MAUL
ZAT041	(replace)grade ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT045	(replace)grade ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT026	(replace)grade ties	*D	*r CLAW BAR	*d MAUL
ZAT030	(replace)grade ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT034	(replace)grade ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT038	(replace)grade ties	*D	*r HYDREJECTOR	*d MAUL
ZAT042	(replace)grade ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT046	(replace)grade ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT027	(replace)switch ties	.	*r CLAW BAR	*d MAUL
ZAT031	(replace)switch ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT035	(replace)switch ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT039	(replace)switch ties	.	*r HYDREJECTOR	*d MAUL
ZAT043	(replace)switch ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT047	(replace)switch ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT028	(replace)switch ties	*D	*r CLAW BAR	*d MAUL
ZAT032	(replace)switch ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT036	(replace)switch ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT040	(replace)switch ties	*D	*r HYDREJECTOR	*d MAUL
ZAT044	(replace)switch ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT048	(replace)switch ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER

ZAT 025 **Remove and reinstall N grade ties using cable-assisted tie puller.**

000.46710 hours per ties to be removed and reinstalled

ZAT 029 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes driven with air hammer.**

000.43670 hours per ties to be removed and reinstalled

ZAT 033 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes driven with hydraulic hammer.**

000.37930 hours per ties to be removed and reinstalled

ZAT 037 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes pulled with hydraulic spike remover.**

000.45680 hours per ties to be removed and reinstalled

ZAT 041 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer.**

000.42640 hours per ties to be removed and reinstalled

ZAT 045 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer.**

000.36900 hours per ties to be removed and reinstalled

ZAT 026 **Remove and reinstall N grade ties using cable-assisted tie puller, load and distribute new ties, load and unload old ties.**

000.51960 hours per ties to be removed and reinstalled

ZAT 030 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes driven with air hammer, load and distribute new ties, load and unload old ties.**

000.48920 hours per ties to be removed and reinstalled

ZAT 034 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes driven with hydraulic hammer, load and distribut new ties, load and unload old ties.**

000.43180 hours per ties to be removed and reinstalled

ZAT 038 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.**

000.50930 hours per ties to be removed and reinstalled

ZAT 042 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.**

000.47890 hours per ties to be removed and reinstalled

ZAT 046 **Remove and reinstall N grade ties using cable-assisted tie puller, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.**

000.42150 hours per ties to be removed and reinstalled

ZAT 027 **Remove and reinstall N switch ties using cable-assisted tie puller.**

000.74590 hours per ties to be removed and reinstalled

ZAT 031 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes driven with air hammer.**

000.68740 hours per ties to be removed and reinstalled

ZAT 035 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes driven with hydraulic hammer.**

000.59130 hours per ties to be removed and reinstalled

ZAT 039 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes pulled with hydraulic spike remover.**

000.70890 hours per ties to be removed and reinstalled

ZAT 043 **Remove and reinstall N switch ties using cable assisted tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer.**

000.65040 hours per ties to be removed and reinstalled

ZAT 047 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer.**

000.55430 hours per ties to be removed and reinstalled

ZAT 028 **Remove and reinstall N switch ties using cable-assisted tie puller, load and distribute new ties, load and unload old ties.**

000.91390 hours per ties to be removed and reinstalled

ZAT 032 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes driven with air hammer, load and distribute new ties, load and unload old ties.**

000.85540 hours per ties to be removed and reinstalled

ZAT 036 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes driven with hydraulic hammer, load and distribut new ties, load and unload old ties.**

000.75930 hours per ties to be removed and reinstalled

ZAT 040 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.**

000.87690 hours per ties to be removed and reinstalled

ZAT 044 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes removed with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.**

000.81840 hours per ties to be removed and reinstalled

ZAT 048 **Remove and reinstall N switch ties using cable-assisted tie puller, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.**

000.72230 hours per ties to be removed and reinstalled

TIES (replace)w/ GANDY SNAPPER type mechanical tie puller & installer

These task are for the Grandy Snapper Type -Mechanized Equipment method of replacing grade or switch ties. Includes: raise & lower track per 1/2 rail & raise every 5 ties, use Grandy snapper to pull & reinsert tie under rails;

*D = distribute new & collect used ties along right of way by crane/sling/tongs/hand load as reqd.to truck/flat car/stock/dump.

*r = SPIKES REMOVE WITH - (CLAW BAR or HYDREJECTOR)

*d = SPIKES DRIVE WITH - (MAUL or AIR/or HYDRAULIC HAMMER)

Ballast tamping using air or electric hand tampers, Dress 1.6ft. of ballast per tie.

TASK TIME STANDARDS LISTING

ZAT049	(replace)grade ties	.	*r CLAW BAR	*d MAUL
ZAT053	(replace)grade ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT057	(replace)grade ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT061	(replace)grade ties	.	*r HYDREJECTOR	*d MAUL
ZAT065	(replace)grade ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT069	(replace)grade ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT050	(replace)grade ties	*D	*r CLAW BAR	*d MAUL
ZAT054	(replace)grade ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT058	(replace)grade ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT062	(replace)grade ties	*D	*r HYDREJECTOR	*d MAUL
ZAT066	(replace)grade ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT070	(replace)grade ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT051	(replace)switch ties	.	*r CLAW BAR	*d MAUL
ZAT055	(replace)switch ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT059	(replace)switch ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT063	(replace)switch ties	.	*r HYDREJECTOR	*d MAUL
ZAT067	(replace)switch ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT071	(replace)switch ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT052	(replace)switch ties	*D	*r CLAW BAR	*d MAUL
ZAT056	(replace)switch ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT060	(replace)switch ties	*D	*r CLAW BAR	*d HYRRAULIC HAMMER
ZAT064	(replace)switch ties	*D	*r HYDREJECTOR	*d MAUL
ZAT068	(replace)switch ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT072	(replace)switch ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER

ZAT 049 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller.

000.41440 hours per ties to be removed and reinstalled

ZAT 053 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes driven with air hammer.

000.40240 hours per ties to be removed and reinstalled

ZAT 057 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes driven with hydraulic hammer.

000.34500 hours per ties to be removed and reinstalled

ZAT 061 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover.

000.45680 hours per ties to be removed and reinstalled

ZAT 065 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer.

000.39210 hours per ties to be removed and reinstalled

ZAT 069 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer.

000.33470 hours per ties to be removed and reinstalled

ZAT 050 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, load and distribute new ties, load and unload old ties.

000.46690 hours per ties to be removed and reinstalled

ZAT 054 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

000.45490 hours per ties to be removed and reinstalled

ZAT 058 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.

000.39750 hours per ties to be removed and reinstalled

ZAT 062 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.

000.50930 hours per ties to be removed and reinstalled

ZAT 066 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

000.44460 hours per ties to be removed and reinstalled

ZAT 070 Remove and reinstall N grade ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, loa and unload old ties.

000.38720 hours per ties to be removed and reinstalled

ZAT 051 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller.

000.64960 hours per ties to be removed and reinstalled

ZAT 055 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes driven with air hammer.

000.62800 hours per ties to be removed and reinstalled

ZAT 059 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes driven with hydraulic hammer.

000.53200 hours per ties to be removed and reinstalled

ZAT 063 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover.

000.70890 hours per ties to be removed and reinstalled

ZAT 067 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer.

000.59100 hours per ties to be removed and reinstalled

ZAT 071 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer.

000.49500 hours per ties to be removed and reinstalled

ZAT 052 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, load and distribute new ties, load and unload old ties.

000.81760 hours per ties to be removed and reinstalled

ZAT 056 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

000.79600 hours per ties to be removed and reinstalled

ZAT 060 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.

000.70000 hours per ties to be removed and reinstalled

ZAT 064 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.

000.87690 hours per ties to be removed and reinstalled

ZAT 068 Remove and reinstall N switch ties using "Gandy Snapper" - type tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.

000.75900 hours per ties to be removed and reinstalled

ZAT 072 Remove and reinstall N switch ties using "Gandy Snapper" type tie puller, spikes removed with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, loa and unload old ties.

000.66300 hours per ties to be removed and reinstalled

These tasks are for the Hydraulic Equipment Mechanized Equipment method of replacing grade or switch ties. Includes: raise & lower track per 1/2 rail & raise every 5 ties, Hydraulic equipment pull & reinsert tie under rails;
*D = distribute new & collect used ties along right of way by crane/sling/tongs/hand load as reqd.to truck/flat car/stock/dump.
*r = SPIKES REMOVE WITH - (CLAW BAR or HYDREJECTOR)
*d = SPIKES DRIVE WITH - (MAUL or AIR/or HYDRAULIC HAMMER)
Ballast tamping using air or electric hand tampers, Dress1.6ft. of ballast per tie.

TASK TIME STANDARDS LISTING

ZAT073	(replace)grade ties	.	*r CLAW BAR	*d MAUL
ZAT077	(replace)grade ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT081	(replace)grade ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT085	(replace)grade ties	.	*r HYDREJECTOR	*d MAUL
ZAT089	(replace)grade ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT093	(replace)grade ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT074	(replace)grade ties	*D	*r CLAW BAR	*d MAUL
ZAT078	(replace)grade ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT082	(replace)grade ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT086	(replace)grade ties	*D	*r HYRREJECTOR	*d MAUL
ZAT090	(replace)grade ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT094	(replace)grade ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT075	(replace)switch ties	.	*r CLAW BAR	*d MAUL
ZAT079	(replace)switch ties	.	*r CLAW BAR	*d AIR HAMMER
ZAT083	(replace)switch ties	.	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT087	(replace)switch ties	.	*r HYDREJECTOR	*d MAUL
ZAT091	(replace)switch ties	.	*r HYDREJECTOR	*d AIR HAMMER
ZAT095	(replace)switch ties	.	*r HYDREJECTOR	*d HYDRAULIC HAMMER
ZAT076	(replace)switch ties	*D	*r CLAW BAR	*d MAUL
ZAT080	(replace)switch ties	*D	*r CLAW BAR	*d AIR HAMMER
ZAT084	(replace)switch ties	*D	*r CLAW BAR	*d HYDRAULIC HAMMER
ZAT088	(replace)switch ties	*D	*r HYDREJECTOR	*d MAUL
ZAT092	(replace)switch ties	*D	*r HYDREJECTOR	*d AIR HAMMER
ZAT096	(replace)switch ties	*D	*r HYDREJECTOR	*d HYDRAULIC HAMMER

ZAT 073 **Remove and reinstall N grade ties using hydraulic tie puller.**

000.39870 hours per ties to be removed and reinstalled

ZAT 077 **Remove and reinstall N grade ties using hydraulic tie puller, spikes driven with air hammer.**

000.36760 hours per ties to be removed and reinstalled

ZAT 081 **Remove and reinstall N grade ties using hydraulic tie puller, spikes driven with hydraulic hammer.**

000.31080 hours per ties to be removed and reinstalled

ZAT 085 **Remove and reinstall N grade ties using hydraulic tie puller, spikes removed with hydraulic spike puller.**

000.38850 hours per ties to be removed and reinstalled

ZAT 089 **Remove and reinstall N grade ties using hydraulic tie puller, pull spikes with hydraulic spike remover; spikes driven with air hammer.**

000.35740 hours per ties to be removed and reinstalled

ZAT 093 **Remove and reinstall N grade ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer.**

000.30060 hours per ties to be removed and reinstalled

ZAT 074 **Remove and reinstall N grade ties using hydraulic tie puller, load and distribute new ties, load and unload old ties.**

000.45120 hours per ties to be removed and reinstalled

ZAT 078 **Remove and reinstall N grade ties using hydraulic tie puller, spikes driven with air hammer, load and distribute new ties load and unload old ties.**

000.42010 hours per ties to be removed and reinstalled

ZAT 082 **Remove and reinstall N grade ties using hydraulic tie puller, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.**

000.36330 hours per ties to be removed and reinstalled

ZAT 086 Remove and reinstall N grade ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.

000.46730 hours per ties to be removed and reinstalled

ZAT 090 Remove and reinstall N grade ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven withf air hammer, load and distribute new ties, load and unload old ties.

000.40990 hours per ties to be removed and reinstalled

ZAT 094 Remove and reinstall N grade ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.

000.35310 hours per ties to be removed and reinstalled

ZAT 075 Remove and reinstall N switch ties using hydraulic tie puller.

000.66210 hours per ties to be removed and reinstalled

ZAT 079 Remove and reinstall N switch ties using hydraulic tie puller, spikes driven with air hammer.

000.60360 hours per ties to be removed and reinstalled

ZAT 083 Remove and reinstall N switch ties using hydraulic tie puller, spikes driven with hydraulic hammer.

000.50750 hours per ties to be removed and reinstalled

ZAT 087 Remove and reinstall N switch ties using hydraulic tie puller, spikes pulled with hydraulic spike remover.

000.63440 hours per ties to be removed and reinstalled

ZAT 091 Remove and reinstall N switch ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer.

000.57590 hours per ties to be removed and reinstalled

ZAT 095 Remove and reinstall N switch ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer.

000.47980 hours per ties to be removed and reinstalled

ZAT 076 **Remove and reinstall N switch ties using hydraulic tie puller, load and distribute new ties, load and unload old ties.**

000.83010 hours per ties to be removed and reinstalled

ZAT 080 **Remove and reinstall N switch ties using hydraulic tie puller, spikes driven with air hammer, load and distribute new ties, load and unload old ties.**

000.77160 hours per ties to be removed and reinstalled

ZAT 084 **Remove and reinstall N switch ties using hydraulic tie puller, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.**

000.67550 hours per ties to be removed and reinstalled

ZAT 088 **Remove and reinstall N switch ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, load and distribute new ties, load and unload old ties.**

000.80240 hours per ties to be removed and reinstalled

ZAT 092 **Remove and reinstall N switch ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven with air hammer, load and distribute new ties, load and unload old ties.**

000.74390 hours per ties to be removed and reinstalled

ZAT 096 **Remove and reinstall N switch ties using hydraulic tie puller, spikes pulled with hydraulic spike remover, spikes driven with hydraulic hammer, load and distribute new ties, load and unload old ties.**

000.64780 hours per ties to be removed and reinstalled

Straight Rails: Remove and Reinstall Manually * = rail joint
Task includes replacement of straight 33 to 40 ft. rail sections using hand tools. Rail joints are either bolted or welded together. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT099	*bolted	RAIL SECTIONS	(replace)	includes distb.of new & removal of old rails
ZAT097	*bolted	RAIL SECTIONS	(replace)	
ZAT100	*welded	RAIL SECTIONS	(replace)	includes distb.of new & removal of old rails
ZAT098	*welded	RAIL SECTIONS	(replace)	

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 099 Remove and reinstall N straight rails using hand tools, rail joints bolted together, load and distribute new rails and dispose of old rails.

000.23340 hours per JOB SETUP TIME

002.60930 hours per rails to be removed and reinstalled

ZAT 097 Remove and reinstall N straight rails using hand tools, rail joints bolted together.

000.23340 hours per JOB SETUP TIME

002.44130 hours per rails to be removed and reinstalled

ZAT 100 Remove and reinstall N straight rails using hand tools, rail joints welded together, load and distribute new rails and dispose of old rails.

002.31250 hours per JOB SETUP TIME

004.68840 hours per rails to be removed and reinstalled

ZAT 098 Remove and reinstall N straight rails using hand tools, rail joints welded together.

002.31250 hours per JOB SETUP TIME

004.52040 hours per rails to be removed and reinstalled

Straight Rails: Remove and Reinstall Using Mechanized Equipment
Task includes replacement of straight 33 to 40 ft. rail sections using a crane and power tools. Rail joints are either bolted or welded together. Travel time to and from work site is not included. * = rail joints

TASK TIME STANDARDS LISTING

ZAT101	*bolted	RAIL SECTIONS	(replace)	
ZAT103	*bolted	RAIL SECTIONS	(replace)	includes distb.of new & removal of old rails
ZAT102	*welded	RAIL SECTIONS	(replace)	
ZAT104	*welded	RAIL SECTIONS	(replace)	includes distb.of new & removal of old rails

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 101 Remove and reinstall N straight rails using crane and power tools, rail joints bolted together.

000.10810 hours per JOB SETUP TIME

002.21750 hours per rails to be removed and reinstalled

ZAT 103 Remove and reinstall N straight rails using crane and power tools, rail joints bolted together, load and distribute new rails and dispose of old rails.

000.10810 hours per JOB SETUP TIME

002.38550 hours per rails to be removed and reinstalled

ZAT 102 Remove and reinstall N straight rails using crane and power tools, rail joints welded together.

002.25340 hours per JOB SETUP TIME

004.36280 hours per rails to be removed and reinstalled

ZAT 104 Remove and reinstall N straight rails using crane and power tools, rail joints welded together, load and distribute new rails and dispose of old rails.

002.25340 hours per JOB SETUP TIME

004.53080 hours per rails to be removed and reinstalled

Curved Rails: Remove and Reinstall Manually * = rail joints
Task includes replacement of curved 33 to 40 ft. rail sections using hand tools. Rail joints are either bolted or welded together. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT105	*bolted	CURVED RAILS	(replace)	
ZAT109	*bolted	CURVED RAILS	(replace)	includes distb.of new & removal of old rails
ZAT107	*welded	CURVED RAILS	(replace)	
ZAT110	*welded	CURVED RAILS	(replace)	includes distb.of new & removal of old rails

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 105 Remove and reinstall N curved rails using hand tools, rail joints bolted together.

000.23340 hours per JOB SETUP TIME

003.22378 hours per rails to be removed and reinstalled

ZAT 109 Remove and reinstall N curved rails using hand tools, rail joints bolted together, load and distribute new rails and dispose of old rails.

000.23340 hours per JOB SETUP TIME

003.40580 hours per rails to be removed and reinstalled

ZAT 107 Remove and reinstall N curved rails using hand tools, rail joints welded together.

002.31250 hours per JOB SETUP TIME

005.31690 hours per rails to be removed and reinstalled

ZAT 110 Remove and reinstall N curved rails using hand tools, rail joints welded together, load and distribute new rails and dispose of old rails.

002.31250 hours per JOB SETUP TIME

005.48490 hours per rails to be removed and reinstalled

Curved Rails: Remove and Reinstall Using Mechanized Equipment
Task includes replacement of curved 33 to 40 ft. rail section using a crane and power tools. Rail joints are either bolted or welded together. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT106	*bolted	CURVED RAILS	(replace)	
ZAT111	*bolted	CURVED RAILS	(replace)	includes distb.of new & removal of old rails
ZAT108	*welded	CURVED RAILS	(replace)	
ZAT112	*welded	CURVED RAILS	(replace)	includes distb.of new & removal of old rails

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 106 Remove and reinstall N curved rails using crane and power tools, rail joints bolted together.

000.10810 hours per JOB SETUP TIME

003.01410 hours per rails to be removed and reinstalled

ZAT 111 Remove and reinstall N curved rails using crane and power tools, rail joints bolted together, load and distribute new rails and dispose of old rails.

000.10810 hours per JOB SETUP TIME

003.18210 hours per rails to be removed and reinstalled

ZAT 108 Remove and reinstall N curved rails using crane and power tools, rail joints welded together.

002.25340 hours per JOB SETUP TIME

005.15940 hours per rails to be removed and reinstalled

ZAT 112 Remove and reinstall N curved rails using crane and power tools, rail joints welded together, load and distribute new rails and dispose of old rails.

002.25340 hours per JOB SETUP TIME

005.32740 hours per rails to be removed and reinstalled

Curved Rails: Remove and Reinstall Using Mechanized Equipment, Includes Gauging * = rail joints

Task includes replacement of curved rails using a crane and power tools, including gauging of rails. Rail joints are either welded or bolted together. Travel time to and from work site not included. Distribution of new rails and removal of old rails is included.

TASK TIME STANDARDS LISTING

ZAT128	*bolted	CURVED RAILS	(replace)
ZAT129	*welded	CURVED RAILS	(replace)

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 128 Remove and reinstall N curved rails using crane and power tools rail joints bolted together, install gauge rods and adjust; load and distribute new rails and dispose of old rails.

000.10810 hours per JOB SETUP TIME

003.43410 hours per rails to be removed and reinstalled

ZAT 129 Remove and reinstall N curved rails using crane and power tools; rail joints welded together, install gauge rods and adjust; load and distribute new rails and dispose of old rail.

002.25340 hours per JOB SETUP TIME

005.57940 hours per rails to be removed and reinstalled

Switch Rails, Switch Frogs: Remove and Reinstall Manually
Task includes replacement of switch rails and switch frogs using hand tools. Travel time to and from work site is not included.
* = rail joints

TASK TIME STANDARDS LISTING

ZAT113	*bolted	SWITCH RAILS	(replace)
ZAT115	*bolted	SWITCH RAILS	(replace) inclds.distribution of new & removal of old rails
ZAT114	*welded	SWITCH RAILS	(replace)
ZAT116	*welded	SWITCH RAILS	(replace) inclds.distribution of new & removal of old rails
ZAT125		SWITCH FROGS	(remove & reinstall)

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 113 Remove and reinstall N switch rails, rail joints bolted together

001.02630 hours per switch rails to be removed and reinstalled

ZAT 115 Remove and reinstall N switch rails, rail joints bolted together load and distribute new rails and dispose of old rails.

001.19430 hours per switch rails to be removed and reinstalled

ZAT 114 Remove and reinstall N switch rails, rail joints welded together

003.10540 hours per switch rails to be removed and reinstalled

ZAT 116 Remove and reinstall N switch rails, rail joints welded together load and distribute new rails and dispose of old rails.

003.27340 hours per switch rails to be removed and reinstalled

ZAT 125 Remove and reinstall N switch frogs manually.

002.73130 hours per switch frogs to be removed and reinstalled

Straight or Curved Closure Rails, Switch and Closure Rails:
Remove and Reinstall Manually
Task includes replacement of straight or curved closure rails or switch and closure rail sets using hand tools. Travel time to and from work site is not included. * = rail joints

TASK TIME STANDARDS LISTING

ZAT117	*bolted	STRAIGHT OR CURVED closure rails, (replace)
ZAT119	*bolted	STRAIGHT OR CURVED closure rails, (replace includes distb.of new & removal of old rails
ZAT121	*bolted	SWITCH & CLOSURE RAILS (replace)
ZAT123	*bolted	SWITCH & CLOSURE RAILS (replace) includes distb.of new & removal of old rails
ZAT118	*welded	STRAIGHT OR CURVED closure rails, (replace)
ZAT120	*welded	STRAIGHT OR CURVED closure rails, (replace) includes distb.of new & removal of old rails
ZAT122	*welded	SWITCH & CLOSURE RAILS
ZAT124	*welded	SWITCH & CLOSURE RAILS (replace) includes distb.of new & removal of old rails

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 117 Remove and reinstall N straight or curved closure rails, rail joints bolted together.

000.23340 hours per JOB SETUP TIME

004.36400 hours per closure rails to be removed and reinstalled

ZAT 119 Remove and reinstall N straight or curved closure rails, rail joints bolted together, load and distribute new rails and dispose of old rails.

000.23340 hours per JOB SETUP TIME

004.53200 hours per closure rails to be removed and reinstalled

ZAT 121 Remove and reinstall N switch rails and closure rails using hand tools, rail joints bolted together.

000.23340 hours per JOB SETUP TIME

005.42690 hours per switch and closure rails to be removed and reinstalled

ZAT 123 Remove and reinstall N switch rails and closure rails using hand tools, rail joints bolted together, load and distribute new rails and dispose of old rails.

000.23340 hours per JOB SETUP TIME

005.59490 hours per switch and closure rails to be removed and reinstalled

ZAT 118 Remove and reinstall N straight or curved closure rails, rail joints welded together.

002.31250 hours per JOB SETUP TIME

006.44310 hours per closure rails to be removed and reinstalled

ZAT 120 Remove and reinstall N straight or curved closure rails, rail rail joints welded together, load and distribute new rails and dispose of old rails.

002.31250 hours per JOB SETUP TIME

006.61110 hours per closure rails to be removed and reinstalled

ZAT 122 Remove and reinstall N switch rails and closure rails using hand tools, rail joints welded together.

002.31250 hours per JOB SETUP TIME

007.50600 hours per switch and closure rails to be removed and reinstalled

ZAT 124 Remove and reinstall N switch rails and closure rails using hand tools, rail joints welded together, load and distribute new rails and dispose of old rails.

002.31250 hours per JOB SETUP TIME

007.67400 hours per switch and closure rails to be removed and reinstalled

Switch or Partial Switch: Remove and Reinstall Manually
Task includes replacement of switch and partial switches using hand tools. A switch consists of: one frog, two switch rails, two closure rails, and two straight rails. A partial switch consists of: one frog, two switch rails, and one closure rail. Rail joints are either bolted or welded together. Travel time to and from work site is not included. Distribution of new rails and removal of old rails is included.
* = rail joints

TASK TIME STANDARDS LISTING

ZAT130	*bolted	SWITCH	(replace)
ZAT126	*bolted	partial-SWITCH	(replace)
ZAT131	*welded	SWITCH	(replace)
ZAT127	*welded	partial-SWITCH	(replace)

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 130 Repair switch; remove and reinstall one frog, two switch rails, two closure rails and two straight rails, rail joints bolted together, load and distribute new rails, dispose of old rails.

019.19510 hours per switches to be removed and reinstalled

ZAT 126 Remove and reinstall one frog, two switch rails and one closure rail using hand tools, rail joints bolted together, load and distribute new rails, dispose of old rails.

010.29550 hours per partial switches to be removed and reinstal led.

ZAT 131 Repair switch; remove and reinstall one frog, two switch rails, two closure rails and two straight rails, rail joints welded together, load and distribute new rails, dispose of old rails.

032.06690 hours per switches to be removed and reinstalled

ZAT 127 Remove and reinstall one frog, two switch rails and one closure using hand tools, rail joints welded together, load and distribute new rails, dispose of old rails.

018.61190 hours per partial switches to be removed and reinstal led.

Straight or Curved Rails Along Concrete Installations: Remove and Reinstall Manually
Includes replacement of straight or curved 33 to 40 ft. rail sections along concrete installations where the rails are bolted into concrete troughs. Rails, when bolted in, butt against each other and require no bolting or welding together. Travel time to and from the work site is not included.

TASK TIME STANDARDS LISTING

ZAT132 STRAIGHT OR CURVED RAILS (replace) in concrete installations
ZAT133 STRAIGHT OR CURVED RAILS (replace) in concrete installations inclds.distb.of new & removal of old rails
ZAT134 STRAIGHT OR CURVED RAILS (replace) in concrete installations surface rail & reposition studs as necessary
ZAT135 STRAIGHT OR CURVED RAILS (replace) in concrete instal.surface rail & reposition studs as reqd.distribute, remove rails

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 132 Remove and reinstall N straight or curved rails in concrete installations.

003.90770 hours per rails to be removed and reinstalled

ZAT 133 Remove and reinstall N straight or curved rails in concrete installations, load and distribute new rails and dispose of old rails.

004.07570 hours per rails to be removed and reinstalled

ZAT 134 Remove and reinstall N straight or curved rails in concrete installations, surface rail bed and reposition studs as necessary.

007.23610 hours per rails to be removed and reinstalled

ZAT 135 Remove and reinstall N straight or curved rails in concrete installations, surface rail bed and reposition studs as necessary, load and distribute new rails, dispose of old rails.

007.40410 hours per rails to be removed and reinstalled

Track: Raise and Surface Using Mechanized Equipment - Soft Subgrade
Task includes raising and surfacing N feet of track over soft subgrade, aligning rail, tamping and dressing ballast, using mechanized equipment such as a tamping machine. Other operations are performed manually. Travel time to and from the work site is not included.

TASK TIME STANDARDS LISTING

ZAT137 RAISE & SURFACE
ZAT139 RAISE & SURFACE -tamping machine must make two moves per tie due to curvature or obstruction.

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 137 Raise and surface N feet of track with machine tampers, soft subgrade, align rail, tamp and dress ballast.

000.02000 hours per track feet to be raised and surfaced

ZAT 139 Raise and surface N feet of track, soft subgrade, where tamping machine must make two moves per tie due to obstructions, align rail, tamp and dress ballast.

000.02440 hours per track feet to be raised and surfaced

Track: Raise and Surface Using Mechanized Equipment - Firm or Medium Subgrade
Task includes raising and surfacing N feet of track over firm or medium subgrade, aligning rail, tamping and dresing ballast, using mechanized equipment such as a tamping machine. Other operations are performed manually. Travel time to and from the work site is not included.

TASK TIME STANDARDS LISTING

ZAT138 RAISE & SURFACE
ZAT140 RAISE & SURFACE- tamping machine makes two moves per tie due to curvature or obstruction.
ZAT142 RAISE & SURFACE- includes 80 ft. of track through two switches.

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 138 Raise and surface N feet of track with machine tamper, firm or medium subgrade, align rail, tamp and dress ballast.

000.01880 hours per track feet to be raised and surfaced

ZAT 140 Raise and surface N feet of track, firm or medium subgrade, where tamping machine must make two moves per tie due to obstructions, align rail, tamp and dress ballast.

000.02200 hours per track feet to be raised and surfaced

ZAT 142 Raise and surface track through two switches and N feet of connecting track, firm or medium subgrade.

010.63500 hours per JOB SETUP TIME

000.01880 hours per track feet to be raised and surfaced

Track: Raise and Surface Manually
Rails: Regauge Manually
Tasks include raising and surfacing N feet of track using hand tools including electric or air tampers and for regauging rails for N feet of track, using hand tools. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT136 RAISE & SURFACE
ZAT141 RAISE & SURFACE includes 40 ft. of track through one switch.
ZAT143 REGAUGE RAILS

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 136 Raise and surface N feet of track with hand tampers, align rail tamp and dress ballast.

000.04720 hours per track feet to be raised and surfaced

ZAT 141 Raise and surface N feet of track through one switch, with hand tampers, align rail, tamp and dress ballast.

005.31750 hours per JOB SETUP TIME

000.04720 hours per additional track feet to be raised and surfaced

ZAT 143 Regauge rails for N feet of track, using hand tools.

000.07830 hours per track feet to be regauged

Tie Plates, Rail Anchors: Remove and Reinstall
Tasks include replacement of tie plates and rail anchors using hand tools. Replacement includes distribution of new tie plates, rail anchors, spikes, and removal of old tie plates, rail anchors, and spikes. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT144 TIE PLATES (replace)
ZAT145 RAIL ANCHORS (replace)

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 144 Remove and reinstall N tie plates, distribute hardware.

000.08720 hours per tie plates

ZAT 145 Remove and reinstall N rail anchors, distribute hardware.

000.01940 hours per rail anchors

Railroad Hardware or Bumping Post: Install
Tasks include installation of tie irons, gauge rods, switch point protectors, and bumping post, using hand tools except for a power rail drill. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT146	TIE IRONS	(install)	installation includes distribution
ZAT147	GUAGE RODS	(install)	installation includes distribution
ZAT148	SWITCH POINT PROTECTORS	(install)	installation includes distribution
ZAT149	BUMPING POST	(install)	

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 146 Install N tie irons, distribute hardware.

000.01680 hours per tie irons to be installed

ZAT 147 Install N gauge rods, distribute hardware.

000.08130 hours per gauge rods to be installed

ZAT 148 Install N switch point protectors.

000.21630 hours per switch point protectors to be installed

ZAT 149 Install N bumping posts.

001.33050 hours per bumping posts to be installed

Guard Rail, Bolted Crossing, New: Install
Bolted Crossing, Existing: Replace
Tasks include installation of guard rail and new bolted crossings or replacement of bolted crossings. Distribution of new ties, rails, and hardware and removal of old ties, rails, and hardware are included in bolt crossing tasks. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT150	GUARD RAIL	(install)	
ZAT152	BOLTED CROSSING	(install)	where track crosses existing track
ZAT151	BOLTED CROSSING	(replace)	existing

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 150 Install guard rail at railroad crossing, track rails in place.

004.37890 hours per guard rails

ZAT 152 Install bolted crossing where track crosses an existing track.

004.91430 hours per bolted crossings

ZAT 151 Remove and reinstall bolted railroad crossing.

003.94440 hours per bolted crossings

Track Components: Grade Ties, Switch Ties, Rails, or Hardware: Distribute and Dispose Of
Tasks include distribution and disposal of grade ties, switch ties or rails or hardware, using crane and tongs for ties or rails. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT160	grade	TIES
ZAT161	switch	TIES or RAILS
ZAT156		HARDWARE

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 160 Distribute and dispose of N grade ties.

000.05250 hours per grade ties to be distributed and disposed of

ZAT 161 Distribute and dispose of N switch ties or rails.

000.16800 hours per switch ties or rails to be distributed and disposed of

ZAT 156 Distribute N new pieces of hardware and pick up N old pieces of hardware, using hand-car or truck.

000.01380 hours per pieces of hardware to be distributed and disposed of

Track Components and Hardware: Ties or Rails with Hardware:
Distribute and Dispose Of
Tasks include distribution and disposal of grade ties and associated hardware, switch ties and associated hardware, and rails and associated hardware, using crane and tongs. Travel time to and from work site is not included.

TASK TIME STANDARDS LISTING

ZAT153 grade TIES & HARDWARE
ZAT154 switch TIES & HARDWARE
ZAT155 RAILS & HARDWARE

EPS TASK TIME STANDARDS - DESCRIPTIONS AND UNIT HOURS

ZAT 153 Distribute N new and dispose of N old grade ties and hardware.

000.08010 hours per grade ties to be distributed and disposed of

ZAT 154 Distribute N new and dispose of N old switch ties and hardware.

000.22320 hours per switch ties to be distributed and disposed of

ZAT 155 Distribute N new and dispose of N old rails and hardware.

000.49920 hours per rails to be distributed and disposed of

TASK TIME STANDARDS DEVELOPMENT BACKUP

ZAT 001
1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R AISED EVERY 5 TIES FOR 1/5 OCCURENCE
2 REMOVE GRADE TIE; PULL SPIKES WITH CLAW BAR; MANUA LLY PULL TIE FROM UNDER RAILS, PER TIE
3 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY. DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK 1.6 FEET OF TRACK PER TIE

ZAT 002
1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R AISED EVERY 5 TIES.
3 REMOVE GRADE TIE; PULL SPIKES WITH CLAW BAR, MANUA LLY PULL TIE FROM UNDER RAILS, PER TIE.
4 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY. DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 003
1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL RAISED EVERY 5 TIES.
2 REMOVE SWITCH TIE, PULL SPIKES WITH CLAW BAR, MANU ALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY, DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER; PER GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK. 1.6 FEET OF TRAC K PER TIE.

ZAT 004
1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R AISED EVERY 5 TIES.
3 REMOVE SWITCH TIE, PULL SPIKES WITH CLAW BAR, MANU ALLY PULL TIE FROM UNDER RAILS, PER SWITCH TIE
4 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY, DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE. ONE SWITCH TIE EQUAL TO 1.5 GRADE TIES
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC K, 1.6 FEET OF TRACK PER TIE
7 LOAD TIES ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PER TIE

ZAT 005 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE; PULL SPIKES WITH CLAW BAR, MANUA
LLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 006 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE; PULL SPIKES WITH CLAW BAR, MANUA
LLY PULL TIE FROM UNDER RAILS, PER TIE.
4 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 007 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL
RAISED EVERY 5 TIES.
2 REMOVE SWITCH TIE, PULL SPIKES WITH CLAW BAR, MANU
ALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE IN TIE WITH AIR HAMMER, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER; PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK. 1.6 FEET OF TRAC
K PER TIE.

ZAT 008 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE SWITCH TIE, PULL SPIKES WITH CLAW, MANUALLY
PULL TIE FROM UNDER RAILS, PER SWITCH TIE.
4 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK 1.6 FEET OF TRACK
PER TIE
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 009
1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R AISED EVERY 5 TIES.
2 REMOVE GRADE TIE; PULL SPIKES WITH CLAW BAR, MANUA LLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY. DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC K PER TIE.

ZAT 010
1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R AISED EVERY 5 TIES FOR 1/5 OCCURENCE
3 REMOVE GRADE TIE; PULL SPIKES WITH CLAW BAR; MANUA LLY PULL TIE FROM UNDER RAILS, PER TIE.
4 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY. DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 011
1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL RAISED EVERY 5 TIES.
2 REMOVE SWITCH TIE, PULL SPIKES WITH CLAW BAR, MANU ALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY, DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TI
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER; PER GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK. 1.6 FEET OF TRAC K PER TIE.

ZAT 012
1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R AISED EVERY 5 TIES.
3 REMOVE SWITCH TIE, PULL SPIKES WITH CLAW BAR, MANU ALLY PULL TIE FROM UNDER RAILS, PER SWITCH TIE
4 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY, DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TI
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 013 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE; PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 014 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE; PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
4 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 015 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL
RAISED EVERY 5 TIES.
2 REMOVE SWITCH TIE, PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER; PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE

ZAT 016 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE SWITCH TIE, PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER SWITCH TI
4 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH MAUL, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 017 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE; PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 018 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOA
D WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE; PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
4 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 019 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL
RAISED EVERY 5 TIES.
2 REMOVE SWITCH TIE, PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER; PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 020 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL
RAISED EVERY 5 TIES.
3 REMOVE SWITCH TIE, PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER SWITCH TI
4 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH AIR HAMMER, PER TIE.
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 021 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE; PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 022 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE; PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
4 INSTALL GRADE TIE; PULL TIE UNDER RAILS MANUALLY.
DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 023 1 RAISE AND LOWER TRACK, PER 1/2 RAIL. RAIL RAISED E
VERY 5 TIES.
2 REMOVE SWITCH TIE, PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER TIE.
3 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TI
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER; PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 024 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE SWITCH TIE, PULL SPIKES WITH "HYDREJECTOR",
MANUALLY PULL TIE FROM UNDER RAILS, PER SWITCH TI
4 INSTALL SWITCH TIE, PULL TIE UNDER RAILS MANUALLY,
DRIVE SPIKES IN TIE WITH HYDRAULIC HAMMER, PER TI
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

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ZAT 025  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         2 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 026  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE -  CABLE-ASSISTED TIE INSTALLER) PULL
         4 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OR TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 027  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER); PUL
         3 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 028  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         3 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER), PUL
         4 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 029  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         2 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 030  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         4 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OR TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL.
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 031  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER); PUL
         3 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 032  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         3 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4 R
         4 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER FO
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 033  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         2 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 034  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY, LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         4 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 035  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER); PUL
         3 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER FO
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 036  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         3 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER), PUL
         4 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER FO
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 037  1 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH.
         2 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER) PULL S
         3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 038  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         4 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OR TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 039  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER); PUL
         3 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 040  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         3 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER), PUL
         4 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 041  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         2 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER) PULL S
         3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 042  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         4 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 043  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER); PUL
         3 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 044  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         3 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER), PUL
         4 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 045  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         2 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER", (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 046  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, "TIE PULLER OR INST
           ALLER" (TYPE - CABLE-ASSISTED TIE INSERTER). PULL
         4 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER" (TYPE - PULLING TIE WITH CABLE UNDER BOTH
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL.
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, P

ZAT 047  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER); PUL
         3 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER BO
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 048  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
         3 REMOVE SWITCH TIE WITH MACHINE, "TIE PULLER OR INS
           TALLER", (TYPE - CABLE-ASSISTED TIE INSERTER), PUL
         4 INSTALL SWITCH TIE WITH MACHINE, "TIE PULLER OR IN
           STALLER", (TYPE - PULLING TIE WITH CABLES UNDER 4
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 049 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL RAISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTALLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH C
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INSTALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRACK PER TIE.

ZAT 050 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL RAISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTALLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH C
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INSTALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRACK PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 051 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL RAISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INSTALLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INSTALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRACK PER TIE.

ZAT 052 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL RAISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER AND INSTALLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER AND INSTALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER GRADE TIE. 1 SWITCH TIE IS EQUAL TO 1.5 GRADE TIE
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRACK PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 053 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH C
3 INSTALL GRADE TIE WITH MACHINE TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN TI
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 054 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH C
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 055 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER, (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER, (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 056 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER, (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER, (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 057 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH C
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 058 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH C
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 059 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER, (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER, (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 060 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER, (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER, (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OR TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 061 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH "
3 INSTALL GRADE TIE WITH MACHINE, "TIE PULLER OR INS
TALLER" (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 062 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH "
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN TI
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 063 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER, (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
3 INSTALL SWITCH TIE WITH MACHINES, TIE PULLER OR IN
STALLER, (TYPE - "GANDY SNAPPER"). DRIVE SPIKES I
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 064 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

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ZAT 065  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
           LLER (TYPE - "GANDY SNAPPER").  PULL SPIKES WITH "
         3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
           ALLER (TYPE - "GANDY SNAPPER").  DRIVE SPIKES IN T
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 066  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
           LLER (TYPE - "GANDY SNAPPER").  PULL SPIKES WITH "
         4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
           ALLER (TYPE - "GANDY SNAPPER").  DRIVE SPIKES IN T
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 067  1 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
           ISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
           ALLER, (TYPE - "GANDY SNAPPER").  PULL SPIKES WITH
         3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
           TALLER, (TYPE - "GANDY SNAPPER").  DRIVE SPIKES IN
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 068  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
           ISED EVERY 5 TIES.
         3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
           ALLER, (TYPE - "GANDY SNAPPER").  PULL SPIKES WITH
         4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
           TALLER, (TYPE - "GANDY SNAPPER").  DRIVE SPIKES IN
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 069 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH "
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 070 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH "
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN T
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 071 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER, (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 072 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER, (TYPE - "GANDY SNAPPER"). PULL SPIKES WITH
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "GANDY SNAPPER"). DRIVE SPIKES IN
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 073 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER AND INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLA
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER AND INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 074 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER AND INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLA
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST PER FOOT OF TRACK, 1.6 FEET OF TRACK
PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 075 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE -"HYDRENEWER"). PULL SPIKES WITH CLAW
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE IS EQUAL TO 1.5 GRADE TIE
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 076 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLA
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH ELECTRIC OR AIR TAMPER, PER GRAD
E TIE. 1 SWITCH TIE IS EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 077 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLAW
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE -"HYDRENEWER"). DRIVE SPIKES IN TIE W
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 078 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLAW
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 079 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLA
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 080 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH CLA
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

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ZAT 081  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
           LLER (TYPE - "HYDRENEWER").  PULL SPIKES WITH CLAW
         3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
           ALLER (TYPE - "HYDRENEWER").  DRIVE SPIKES IN TIE
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 082  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE.
         2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
           LLER (TYPE - "HYDRENEWER").  PULL SPIKES WITH CLAW
         4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
           ALLER (TYPE - "HYDRENEWER").  DRIVE SPIKES IN TIE
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 083  1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
           AISED EVERY 5 TIES.
         2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
           ALLER (TYPE - "HYDRENEWER").  PULL SPIKES WITH CLA
         3 INSTALL SWITCH TIE WTIH MACHINE, TIE PULLER OR INS
           TALLER (TYPE - "HYDRENEWER").  DRIVE SPIKES IN TIE
         4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.

ZAT 084  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
           ISED EVERY 5 TIES.
         3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
           ALLER (TYPE - "HYDRENEWER").  PULL SPIKES WITH CLA
         4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
           TALLER (TYPE - "HYDRENEWER").  DRIVE SPIKES IN TIE
         5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
           GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
         6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
           K PER TIE.
         7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
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ZAT 085 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HYD
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 086 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HYD
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 087 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HY
3 INSTALL SWITCH TIE WITH MACHINES, TIE PULLER OR IN
STALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 088 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HY
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 089 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HYD
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 090 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HYD
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 091 1 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER AND INS
TALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HY
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH ELECTRIC OR AIR TAMPER, PER GRAD
E TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 092 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HY
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 093 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HYD
3 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 094 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
2 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
3 REMOVE GRADE TIE WITH MACHINE, TIE PULLER OR INSTA
LLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HYD
4 INSTALL GRADE TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 095 1 RAISE AND LOWER TRACK, PER 1/2 RAIL LENGTH. RAIL R
AISED EVERY 5 TIES.
2 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HY
3 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
4 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
5 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.

ZAT 096 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 RAISE AND LOWER TRACK PER 1/2 RAIL LENGTH. RAIL RA
ISED EVERY 5 TIES.
3 REMOVE SWITCH TIE WITH MACHINE, TIE PULLER OR INST
ALLER (TYPE - "HYDRENEWER"). PULL SPIKES WITH "HY
4 INSTALL SWITCH TIE WITH MACHINE, TIE PULLER OR INS
TALLER (TYPE - "HYDRENEWER"). DRIVE SPIKES IN TIE
5 TAMP BALLAST WITH HAND ELECTRIC OR AIR TAMPER, PER
GRADE TIE. 1 SWITCH TIE EQUAL TO 1.5 GRADE TIES.
6 DRESS BALLAST, PER FOOT OF TRACK, 1.6 FEET OF TRAC
K PER TIE.
7 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 097 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
2 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES, 60 SPIKES, 12 PLATES WITH 3 SPIKES,
3 INSTALL 39 FOOT STRAIGHT RAIL, MANUALLY DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
4 INSTALL JOINT BAR USING HAND TOOLS.

ZAT 098 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
2 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES, 60 SPIKES, 12 PLATES WITH 3 SPIKES,
3 INSTALL 39 FOOT STRAIGHT RAIL, MANUALLY DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
4 WELD RAIL JOINT, PER RAIL LENGTH

ZAT 099 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH (2 JOINT BARS PER RAIL)
3 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES, 60 SPIKES, 12 PLATES WITH 3 SPIKES,
4 INSTALL 39 FOOT STRAIGHT RAIL, MANUALLY DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
5 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
6 LOAD OLD RAIL ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, PE

ZAT 100 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH (2 JOINT BARS PER RAIL)
3 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES, 60 SPIKES, 12 PLATES WITH 3 SPIKES,
4 INSTALL 39 FOOT STRAIGHT RAIL; MANUALLY DRIVE SPIKES WITH MAUL; PER RAIL LENGTH.
5 WELD RAIL JOINT, PER RAIL LENGTH
6 LOAD OLD RAIL ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, PE

ZAT 101 1 REMOVE JOINT BAR USING TORCH TO BURN BOLTS; PER RAIL LENGTH
2 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES; 60 SPIKES - 12 TIE PLATES WITH 3 SP
3 INSTALL 39 FOOT STRAIGHT RAIL USING CRANE TO PLACE RAIL. DRIVE SPIKES WTIH MAUL, PER RAIL LENGTH.
4 INSTALL JOINT BAR USING IMPACT TOOL, PER RAIL LENGTH

ZAT 102 1 REMOVE JOINT BAR USING TORCH TO BURN BOLTS; PER RAIL LENGTH
2 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES; 60 SPIKES - 12 TIE PLATES WITH 3 SP
3 INSTALL 39 FOOT STRAIGHT RAIL USING CRANE TO PLACE RAIL. DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
4 WELD RAIL JOINT, PER RAIL LENGTH

ZAT 103 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING TORCH TO BURN BOLTS PER RAI L LENGTH
3 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 24 TIE PLATES; 60 SPIKES - 12 TIE PLATES WITH 3 SP
4 INSTALL 39 FOOT STRAIGHT RAIL USING CRANE TO PLACE RAIL. DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
5 INSTALL JOINT BAR USING IMPACT TOOL, PER RAIL LENG TH
6 LOAD USED RAILS ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, P

ZAT 104 1 DISTRIBUTE SWITCH TIES OR RAILS LONG RIGHT-OF-WAY. LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING TORCH TO BURN BOLTS - PER R AIL LENGTH
3 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY (24 TIES, 2 TIE PLATES; 60 SPIKES - 12 TIE PLATES WITH 3 SPI
4 INSTALL 39 FOOT STRAIGHT RAIL USING CRANE TO PLACE RAIL. DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
5 WELD RAIL JOINT PER RAIL LENGTH
6 LOAD USED RAILS ON TRUCK OR FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, P

ZAT 105 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
2 REMOVE A 39 FOOT CURVED RAIL MANUALLY (24 TIES, 24 TIE PLATES - 72 SPIKES) PULL SPIKES WITH CLAW BAR
3 INSTALL A 39 FOOT CURVED RAIL; MANUALLY DRIVE SPIK ES WITH MAUL, PER RAIL
4 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL LENGT H

ZAT 106 1 REMOVE JOINT BAR USING TORCH TO BURN BOLTS, PER RA IL LENGTH
2 REMOVE A 39 FOOT CURVED RAIL MANUALLY, (24 TIES, 2 4 TIE PLATES, 72 SPIKES) PULL SPIKES WITH CLAW BAR
3 INSTALL 39 FOOT CURVED RAIL USING CRANE TO PLACE R AIL, DRIVE SPIKES WITH MAUL, PER RAIL LENGTH
4 INSTALL JOINT BAR USING IMPACT TOOL, PER RAIL LENG TH

ZAT 107 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
2 REMOVE A 39 FOOT CURVED RAIL MANUALLY (24 TIES, 24 TIE PLATES - 72 SPIKES) PULL SPIKES WITH CLAW BAR
3 INSTALL A 39 FOOT CURVED RAIL MANUALLY DRIVE SPIKE S WITH MAUL, PER RAIL.
4 WELD RAIL JOINT, PER RAIL LENGTH.

ZAT 108 1 REMOVE JOINT BAR USING TORCH TO BURN BOLTS, PER RA
IL
2 REMOVE A 39 FOOT CURVED RAIL MANUALLY, (24 TIES, 2
4 TIE PLATES, 72 SPIKES) PULL SPIKES WITH CLAW BAR
3 INSTALL A 39 FOOT CURVED RAIL USING CRANE TO PLACE
RAIL, DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
4 WELD RAIL JOINT, PER RAIL LENGTH

ZAT 109 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
3 REMOVE A 39 FOOT CURVED RAIL MANUALLY, (24 TIES, 2
4 TIE PLATES - 72 SPIKES) PULL SPIKES WITH CLAW BA
4 INSTALL A 39 FOOT CURVED RAIL MANUALLY, DRIVE SPIK
ES WITH MAUL, PER RAIL.
5 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL LENGT
H
6 LOAD USED TIES OR RAILS ON FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 110 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
.
3 REMOVE A 39 FOOT CURVED RAIL MANUALLY, (24 TIES, 2
4 TIE PLATES - 72 SPIKES), PULL SPIKES WITH CLAW B
4 INSTALL A 39 FOOT CURVED RAIL MANUALLY, DRIVE SPIK
ES WITH MAUL, PER RAIL.
5 WELD RAIL JOINT, PER RAIL LENGTH.
6 LOAD USED TIES OR RAILS ON FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 111 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING TORCH TO BURN BOLTS, PER RA
IL LENGTH.
3 REMOVE A 39 FOOT CURVED RAIL MANUALLY, (24 TIES, 2
4 TIE PLATES, 72 SPIKES, 3 PER TIE PLATE), PULL SP
4 INSTALL 39 FOOT CURVED RAIL USING CRANE TO PLACE R
AIL, DRIVE SPIKES WITH MAUL, PER RAIL.
5 INSTALL JOINT BAR USING IMPACT TOOL, PER RAIL LENG
TH.
6 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 112 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING TORCH TO BURN BOLTS, PER RA
IL LENGTH.
3 REMOVE A 39 FOOT CURVED RAIL MANUALLY, (24 TIES, 2
4 TIE PLATES, 72 SPIKES, 3 PER TIE PLATE), PULL SP
4 INSTALL 39 FOOT CURVED RAIL USING CRANE TO PLACE R
AIL; DRIVE SPIKES WITH MAUL; PER RAIL.
5 WELD RAIL JOINT, PER RAIL LENGTH. 2.1938 + N(2.193
8)
6 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 113 1 REMOVE JOINT BAR USING HAND TOOLS, PER SWITCH RAIL
.
2 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
3 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
4 INSTALL JOINT BAR USING HAND TOOLS, PER SWITCH RAI
L.

ZAT 114 1 REMOVE JOINT BAR USING HAND TOOLS, PER SWITCH RAIL
.
2 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
3 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
4 WELD RAIL JOINT, PER SWITCH RAIL.

ZAT 115 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER SWITCH RAIL
.
3 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
4 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
5 INSTALL JOINT BAR USING HAND TOOLS, PER SWITCH RAI
L.
6 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL U
SING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, PE

ZAT 116 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER SWITCH RAIL
.
3 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
4 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
5 WELD RAIL JOINT, PER SWITCH RAIL.
6 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL U
SING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, PE

ZAT 117 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
.
2 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
ULL SPIKE WITH CLAW BAR, PER STRAIGHT OR CURVED CL
3 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
ILL, PER RAIL LENGTH.
4 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER STRAIGHT OR CURVED CLO
5 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL LENGT
H

ZAT 118 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL LENGTH
.
2 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
ULL SPIKE WITH CLAW BAR, PER STRAIGHT OR CURVED CL
3 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
ILL, PER RAIL LENGTH.
4 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER STRAIGHT OR CURVED CLO
5 WELD RAIL JOINT, PER RAIL LENGTH. 2.1938 + N(2.193
8)

ZAT 119 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER CLOSURE RAI
L.
3 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
ULL SPIKE WITH CLAW BAR, PER STRAIGHT OR CURVED CL
4 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
ILL, PER RAIL LENGTH.
5 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER STRAIGHT OR CURVED CLO
6 INSTALL JOINT BAR USING HAND TOOLS, PER CLOSURE RA
IL.
7 LOAD USED RAILS ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA,

ZAT 120 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
2 REMOVE JOINT BAR USING HAND TOOLS, PER CLOSURE RAI
L. .1187 + N(.1187)
3 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
ULL SPIKE WITH CLAW BAR, PER STRAIGHT OR CURVED CL
4 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
ILL, PER RAIL LENGTH.
5 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER STRAIGHT OR CURVED CLO
6 WELD RAIL JOINT, PER CLOSURE RAIL. 2.1938 + N(2.19
38)
7 LOAD USED RAILS ON TRUCK OR FLAT CAR FOR DISPOSAL,
USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA,

ZAT 121 1 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL. .1187
+ N(.1187)
2 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
3 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
ULL SPIKES WITH CLAW BAR PER STRAIGHT OR CURVED CL
4 CUT RAIL TO LENGTH, DRILL 2 HOLES WITH POWER DRILL
, PER RAIL LENGTH.
5 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH
6 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER RAIL.
7 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL.

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ZAT 122  1 REMOVE JOINT BAR USING HAND TOOLS, PER JOINT BAR.
           .1187 + N(.1187)
         2 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
           RAIL, PER SWITCH RAIL.
         3 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
           ULL SPIKES WITH CLAW BAR PER STRAIGHT OR CURVED CL
         4 CUT RAIL TO LENGTH, DRILL 2 HOLES WITH POWER DRILL
           , PER RAIL LENGTH.
         5 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
           DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
         6 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
           DRIVE SPIKES WITH MAUL, PER RAIL.
         7 WELD RAIL JOINT, PER RAIL. 2.1938 + N(2.1938)

ZAT 123  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           .  LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
         2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL. .1187
           + N(.1187)
         3 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
           RAIL, PER SWITCH RAIL.
         4 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
           ULL SPIKES WITH CLAW BAR, PER STRAIGHT OR CURVED C
         5 CUT RAIL TO LENGTH, DRILL 2 HOLES WITH POWER DRILL
           , PER RAIL LENGTH.
         6 INSTALL SWITCH MANUALLY, CUT RAIL WITH TORCH, DRIL
           L RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAIL
         7 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
           DRIVE SPIKES WITH MAUL, PER RAIL
         8 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL. .114
           7 + N(.1147)
         9 LOAD USED RAILS ON FLAT CAR FOR DISPOSAL, USING CR
           ANE AND TONGS.  UNLOAD AT DISPOSAL AREA, PER RAIL

ZAT 124  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           .  LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
         2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL. .1187
           +N(.1187)
         3 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
           RAIL, PER SWITCH RAIL.
         4 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
           ULL SPIKES WITH CLAW BAR, PER STRAIGHT OR CURVED C
         5 CUT RAIL TO LENGTH, DRILL 2 HOLES WITH POWER DRILL
           , PER RAIL LENGTH.
         6 INSTALL SWITCH MANUALLY, CUT RAIL WITH TORCH, DRIL
           L RAIL, SEAT NUTS WITH WRENCH, PER SWITCH.
         7 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
           DRIVE SPIKES WITH MAUL, PER RAIL.
         8 WELD RAIL JOINT, PER RAIL. 2.1938 + N(2.1938)
         9 LOAD USED RAILS ON FLAT CAR FOR DISPOSAL, USING CR
           ANE AND TONGS. UNLOAD AT DISPOSAL AREA, PER RAIL
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ZAT 125 1 REMOVE JOINT BAR USING HAND TOOLS, PER FROG. 4N(.1
187) = N(.4748)
2 REMOVE FROG MANUALLY, PULL SPIKES WITH CLAW BAR, A
SIDE FROG AND TIE PLATES, PER FROG.
3 INSTALL FROG MANUALLY, DRIVE SPIKES WITH MAUL, PER
FROG.
4 INSTALL JOINT BAR USING HAND TOOLS, PER FROG. 4N(.
1147) = N(.4588)

ZAT 126 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
. LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL SET.
3 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
4 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
ULL SPIKE WITH CLAW BAR, PER STRAIGHT OR CURVED CL
5 REMOVE FROG MANUALLY, PULL SPIKES WITH CLAW BAR, A
SIDE FROG AND TIE PLATES, PER FROG.
6 INSTALL FROG MANUALLY, DRIVE SPIKES WITH MAUL, PER
FROG.
7 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
ILL, PER RAIL LENGTH.
8 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER STRAIGHT OR CURVED CLO
9 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
10 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL SET.
11 LOAD USED RAILS ON FLAT CAR FOR DISPOSAL, USING CR
ANE AND TONGS. UNLOAD AT DISPOSAL AREA, PER RAIL

ZAT 127 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
. LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
2 REMOVE JOINT BAR USING HAND TOOLS, PER RAIL SET.
3 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
RAIL, PER SWITCH RAIL.
4 REMOVE STRAIGHT OR CURVED RAIL MANUALLY, PULL SPIK
E WITH CLAW BAR, PER STRAIGHT OR CURVED CLOSURE RA
5 REMOVE FROG MANUALLY, PULL SPIKES WITH CLAW BAR, A
SIDE FROG AND TIE PLATES, PER FROG.
6 INSTALL FROG MANUALLY, DRIVE SPIKES WITH MAUL, PER
FROG.
7 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
ILL, PER RAIL LENGTH.
8 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
DRIVE SPIKES WITH MAUL, PER STRAIGHT OR CURVED CLO
9 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
10 INSTALL JOINT BAR USING HAND TOOLS, PER RAIL SET.
11 WELD RAIL JOINT, PER RAIL SET.
12 LOAD USED RAILS ON FLAT CAR FOR DISPOSAL, USING CR
ANE AND TONGS. UNLOAD AT DISPOSAL AREA, PER RAIL

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ZAT 128  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           .  LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
         2 REMOVE JOINT BAR USING TORCH TO BURN BOLTS, PER RA
           IL. .0596 + N(.0596)
         3 REMOVE A 39 FOOT CURVED RAIL MANUALLY (24 TIES, 24
           TIE PLATES, 72 SPIKES).  PULL SPIKES WITH CLAW BA
         4 INSTALL 39 FOOT CURVED RAIL USING CRANE TO PLACE R
           AIL, DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
         5 INSTALL JOINT BAR USING IMPACT TOOL, PER RAIL. .04
           85 + N(.0485)
         6 REMOVE BALLAST FOR GAUGE ROD INSTALLATION, PER GAU
           GE ROD.
         7 INSTALL GAUGE ROD AND ADJUST RAILS TO GAUGE WITH W
           RENCH, PER GAUGE ROD.
         8 LOAD RAILS ON FLAT CAR FOR DISPOSAL USING CRANE AN
           D TONGS.  UNLOAD AT DISPOSAL AREA, PER RAIL.

ZAT 129  1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           .  LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
         2 REMOVE JOINT BAR USING TORCH TO BURN BOLTS, PER RA
           IL. .0596 + N(.0596)
         3 REMOVE A 39 FOOT CURVED RAIL MANUALLY (24 TIES, 24
           TIE PLATES, 72 SPIKES).  PULL SPIKES WITH CLAW BA
         4 INSTALL 39 FOOT CURVED RAIL USING CRANE TO PLACE R
           AIL, DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
         5 WELD RAIL JOINTS, PER RAIL. 2.1938 + N(2.1938)
         6 REMOVE BALLAST FOR GAUGE ROD INSTALLATION, PER GAU
           GE ROD. 4N(.0126 = N(.0504)
         7 INSTALL GAUGE ROD AND ADJUST RAILS TO GAUGE WITH W
           RENCH, PER GAUGE ROD.
         8 LOAD RAILS ON FLAT CAR FOR DISPOSAL USING CRANE AN
           D TONGS.  UNLOAD AT DISPOSAL AREA, PER RAIL.

ZAT 130  1 DISTRIBUTE NEW RAILS ALONG RIGHT-OF-WAY.  LOAD AND
           UNLOAD WITH CRANE AND TONGS, PER RAIL.
         2 REMOVE JOINT BAR USING HAND TOOLS, PER SWITCH.
         3 REMOVE FROG MANUALLY, PULL SPIKES WITH CLAW BAR, A
           SIDE FROG AND TIE PLATES, PER FROG.
         4 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P
           ULL SPIKES WITH CLAW BAR, PER CLOSURE RAIL.
         5 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE
           RAIL, PER SWITCH RAIL.
         6 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY, (24 TIE P
           LATES, 60 SPIKES - 12 PLATES WITH 2 SPIKES, 12 PLA
         7 INSTALL FROG MANUALLY, DRIVE SPIKES WITH MAUL, PER
           FROG.
         8 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
           ILL, PER RAIL LENGTH.
         9 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY,
           DRIVE SPIKES WITH MAUL, PER CLOSURE RAIL.
        10 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH,
           DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
        11 INSTALL 39 FOOT STRAIGHT RAIL USING CRANE TO PLACE
           RAIL.  DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
        12 INSTALL JOINT BAR USING IMPACT TOOL, PER SWITCH.
        13 LOAD USED RAILS ON FLAT CAR FOR DISPOSAL USING CRA
           NE AND TONGS. UNLOAD AT DISPOSAL AREA, PER RAIL
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ZAT 131 1 DISTRIBUTE NEW RAILS ALONG RIGHT-OF-WAY. LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL.
2 REMOVE JOINT BAR USING HAND TOOLS, PER SWITCH.
3 REMOVE FROG MANUALLY, PULL SPIKES WITH CLAW BAR, A SIDE FROG AND TIE PLATES, PER FROG.
4 REMOVE STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, P ULL SPIKES WITH CLAW BAR, PER CLOSURE RAIL.
5 REMOVE SWITCH RAIL MANUALLY, BURN BOLTS OFF, ASIDE RAIL, PER SWITCH RAIL.
6 REMOVE A 39 FOOT STRAIGHT RAIL MANUALLY, (24 TIE P LATES, 60 SPIKES - 12 PLATES WITH 2 SPIKES, 12 PLA
7 INSTALL FROG MANUALLY, DRIVE SPIKES WITH MAUL, PER FROG.
8 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR ILL, PER RAIL LENGTH.
9 INSTALL STRAIGHT OR CURVED CLOSURE RAIL MANUALLY, DRIVE SPIKES WITH MAUL, PER CLOSURE RAIL.
10 INSTALL SWITCH RAIL MANUALLY, CUT RAIL WITH TORCH, DRILL RAIL, SEAT NUTS WITH WRENCH, PER SWITCH RAI
11 INSTALL 39 FOOT STRAIGHT RAIL USING CRANE TO PLACE RAIL. DRIVE SPIKES WITH MAUL, PER RAIL LENGTH.
12 INSTALL JOINT BAR USING IMPACT TOOL, PER SWITCH.
13 WELD RAIL JOINT, PER SWITCH.
14 LOAD USED RAILS ON FLAT CAR FOR DISPOSAL USING CRA NE AND TONGS. UNLOAD AT DISPOSAL AREA, PER RAIL

ZAT 132 1 REMOVE ASPHALT FROM CONCRETE TROUGH, PER 33FT RAIL LENGTH.
2 REMOVE AND REINSTALL RAIL, NUTS REMOVED WITH IMPAC T GUN, PER RAIL.
3 REINSTALL ASPHALT IN CONCRETE TROUGH, PAINT SIDES OF TROUGH AND RAIL WITH LIQUID ASPHALT AND FILL WI

ZAT 133 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY . LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
2 REMOVE ASPHALT FROM CONCRETE TROUGH, PER 33FT RAIL LENGTH.
3 REMOVE AND REINSTALL RAIL, NUTS REMOVED WITH IMPAC T GUN, PER RAIL.
4 REINSTALL ASPHALT IN CONCRETE TROUGH, PAINT SIDES OF TROUGH AND RAIL WITH LIQUID ASPHALT AND FILL WI
5 LOAD USED TIES ON RAILS ON FLAT CAR FOR DISPOSAL, USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE

ZAT 134 1 REMOVE ASPHALT FROM CONCRETE TROUGH, PER 33FT RAIL LENGTH.
2 REMOVE AND REINSTALL RAIL, NUTS REMOVED WITH IMPAC T GUN OR BURNED OFF, SURFACE RAIL BED AND REPOSITI
3 REINSTALL ASPHALT IN CONCRETE TROUGH, PAINT SIDES OF TROUGH AND RAIL WITH LIQUID ASPHALT AND FILL WI

ZAT 135 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
. LOAD AND UNLOAD WITH CRANE AND TONGS, PER RAIL
2 REMOVE ASPHALT FROM CONCRETE TROUGH, PER 33FT RAIL
LENGTH.
3 REMOVE AND REINSTALL RAIL, NUTS REMOVED WITH IMPAC
T GUN OR BURNED OFF, SURFACE RAIL BED AND REPOSITI
4 REINSTALL ASPHALT IN CONCRETE TROUGH, PAINT SIDES
OF TROUGH AND RAIL WITH LIQUID ASPHALT, TAMP, PER
5 LOAD USED TIES OR RAILS ON FLAT CAR FOR DISPOSAL U
SING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PER

ZAT 136 1 RAISE RAILS AND SIGHT TRACK, PER FOOT.
2 SURFACE TRACK WITH HAND OR ELECTRIC TAMPERS, ALIGN
RAIL WITH BARS, PER FOOT.
3 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 137 1 RAISE RAILS AND SIGHT TRACK, PER FOOT.
2 SURFACE TRACK (GRADE TIES) WITH MACHINE TAMPER (SO
FT SUBGRADE), STRAIGHT LINE, ALIGN RAILS WITH BAR
3 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 138 1 RAISE RAILS AND SIGHT TRACK, PER FOOT.
2 SURFACE TRACK (GRADE TIES) WITH MACHINE TAMPER (FI
RM OR MEDIUM SUBGRADE), ALIGN RAILS WITH BAR, PER
3 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 139 1 RAISE RAILS AND SIGHT TRACK, PER FOOT.
2 SURFACE TRACK (GRADE TIE) WITH TAMPING MACHINE (SO
FT SUBGRADE) TAMPING MACHINE MAKES TWO MOVES PER
3 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 140 1 RAISE RAILS AND SIGHT TRACK, PER FOOT.
2 SURFACE TRACK (GRADE TIE, FIRM OR MEDIUM SUBGRADE)
, WHERE TAMPING MACHINE MUST MAKE TWO MOVES PER
3 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 141 1 SURFACE TRACK THROUGH ONE SWITCH WITH HAND ELECTRI
C OR AIR TAMPERS, ALIGN RAIL, PER SWITCH.
2 RAISE RAILS AND SIGHT TRACK, PER FOOT.
3 SURFACE TRACK WITH HAND ELECTRIC OR AIR TAMPERS, A
LIGN RAIL WITH BARS, PER FOOT.
4 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 142 1 SURFACE TRACK THROUGH SWITCH WITH HAND ELECTRIC OR
AIR TAMPERS, ALIGN RAIL, PER SWITCH.
2 RAISE RAIL AND SIGHT TRACK, PER FOOT.
3 SURFACE TRACK (GRADE TIES) WITH MACHINE TAMPER (FI
RM OR MEDIUM SUBGRADE) ALIGN RAIL WITH BAR, PER FO
4 DRESS BALLAST, PER FOOT OF TRACK.

ZAT 143 1 REGAUGE RAIL FOR 39 FOOT RAIL LENGTH, MANUALLY REM
OVE AND INSTALL SPIKES, GAUGE AND ALIGN RAIL, PER

ZAT 144 1 LOAD HARDWARE FROM STORAGE OR HAND CAR AND UNLOAD
ON RIGHT-OF-WAY, PER PIECE.
2 PULL SPIKE WITH CLAW BAR, PER SPIKE. 2.5N(.0064) =
N(.0160) * 2.5 SPIKES PER PLATE = .0160
3 PLUG SPIKE HOLE WITH WOODEN DOWEL, PER SPIKE. 2.5N
(.0032) = N(.0080) * 2.5 SPIKES PER PLATE = .0080
4 ADZ TIE PLATE SPACE, PER TIE PLATE SPACE.
5 CLEAN TIE PLATE SPACE, APPLY MASTIC TO TIE PLATE S
PACE, PLACE TIE PLATE PAD ON TIE PLATE SPACE, PER
6 ALIGN RAIL FOR RESPIKING 1/2 RAIL LENGTH, ADJUST P
OSITION OF TIE PLATES WITH HAMMER, PER 1/2 RAIL LE
7 RAISE AND LOWER JACK TO PLACE TIE PLATES, PER TIE
PLATE.
8 GET SPIKE FROM ROAD BED AND DRIVE INTO NEW TIE WIT
H MAUL, PER SPIKE.

ZAT 145 1 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
N RIGHT-OF-WAY, PER PIECE.
2 REMOVE RAIL ANCHORS FROM RAIL BY HAND, PER ANCHOR.
3 INSTALL RAIL ANCHOR BY HAND, PER ANCHOR.

ZAT 146 1 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
N RIGHT-OF-WAY, PER PIECE.
2 INSTALL TIE IRON BY HAND, PER IRON.

ZAT 147 1 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
N RIGHT-OF-WAY, PER PIECE.
2 REMOVE BALLAST FOR GAUGE ROD INSTALLATION, PER GAU
GE ROD.
3 POSITION GAUGE BAR ON RAIL AND ADJUST RAILS TO GAU
GE WITH WRENCH.
4 PLACE GAUGE ROD UNDER RAIL AND HOOK END ON RAIL FL
ANGE. INSTALL CLAMP AND HAND TIGHTEN.

ZAT 148 1 DRILL RAIL, PER RAIL.
2 INSTALL (SWITCH POINT PROTECTOR) USING HAND TOOLS,
PER SWITCH POINT PROTECTOR.
3 MATERIAL HANDLING.

ZAT 149 1 LAY OUT HOLES.
2 DRILL RAIL, PER RAIL.
3 PLACE BUMPING POST.
4 ALIGN BUMPING POST.
5 INSTALL JOINT BAR USING HAND TOOLS, PER JOINT BAR.

ZAT 150 1 BURN FLANGE FROM ONE SIDE OF RAIL TO MAKE GUARD RA
IL.
2 CLEAN TIE PLATE SPACE; APPLY MASTIC TO TIE PLATE S
PACE; PLACE TIE PLATE PAD AND TIE PLATE ON TIE PLA
3 ADZ TIE PLATE PLATE SPACE, PER TIE PLATE SPACE.
4 MEASURE, MARK AND LAY OUT POSITION OF BOLT HOLES F
OR GUARD RAIL.
5 BURN HOLES IN GUARD RAIL AND TRACK RAIL.
6 BEND RAIL TO RECEIVE SWITCH POINT, MANUALLY PICK U
P AND POSITION, PER RAIL.
7 PLACE GUARD RAIL IN POSITION.
8 POSITION SEPARATOR BLOCKS.
9 ALIGN RAIL FOR RESPIKING, 1/2 RAIL LENGTH, ADJUST
POSITION OF TIE PLATES WITH HAMMER, PER 1/2 RAIL L
10 POSITION BOLTS.
11 INSTALL NUTS AND TIGHTEN.
12 GET SPIKE FROM ROAD BED AND DRIVE INTO NEW TIE WIT

H MAUL, PER SPIKE.

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ZAT 151  1 REMOVE JOINT BAR USING HAND TOOLS, PER JOINT BAR.
         2 PULL SPIKE WITH CLAW BAR, PER SPIKE.
         3 PLUG SPIKE HOLE WITH WOODEN DOWEL, PER SPIKE.
         4 CLEAN TIE PLATE SPACE, APPLY MASTIC TO TIE PLATE S
           PACE, PLACE TIE PLATE PAD AND TIE PLATE ON THE TIE
         5 REMOVE OLD CROSSING AND PLACE NEW CROSSING.
         6 ALIGN RAIL FOR RESPIKING 1/2 RAIL LENGTH, ADJUST P
           OSITION OF THE PLATES WITH HAMMER, PER 1/2 RAIL LE
         7 INSTALL JOINT BAR USING HAND TOOLS, PER JOINT BAR.
         8 GET SPIKE FROM ROAD BED AND DRIVE INTO NEW TIE WIT
           H MAUL, PER SPIKE.
         9 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
        10 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL U
           SING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PER
        11 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY, PER PIECE.
        12 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE SITE, PER PIECE (TRAVEL TIME NOT IN

ZAT 152  1 CUT RAIL TO LENGTH AND DRILL 2 HOLES WITH POWER DR
           ILL, PER RAIL LENGTH.
         2 PULL SPIKE WITH CLAW BAR, PER SPIKE.
         3 PLUG SPIKE HOLE WITH WOODEN DOWEL, PER SPIKE.
         4 CLEAN TIE PLATE SPACE, APPLY MASTIC TO TIE PLATE S
           PACE, PLACE TIE PLATE PAD AND TIE PLATE ON TIE PLA
         5 ASIDE OLD RAIL.
         6 PLACE BOLTED CROSSING.
         7 ALIGN RAIL FOR RESPIKING, 1/2 RAIL LENGTH, ADJUST
           POSITION OF THE PLATES WITH HAMMER, PER 1/2 RAIL L
         8 INSTALL JOINT BAR USING HAND TOOLS, PER JOINT BAR.
         9 GET SPIKE FROM ROAD BED AND DRIVE INTO NEW TIE WIT
           H MAUL, PER SPIKE.
        10 MEASURE AND MARK FOR DRILLING AND CUTTING RAILS.
        11 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD WITH CRANE AND TONGS, PER SWITCH TIE OR RAIL
        12 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL U
           SING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PER
        13 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY.
        14 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE SITE, PER PIECE (TRAVEL TIME NOT IN

ZAT 153  1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING.  UNLOAD BY HAND, PER TIE
         2 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS; UNLOAD AT DISPOSAL AREA, PE
         3 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY, PER PIECE. 2N(.0064) = N(.0128)
         4 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE, PER PIECE. 2N(.0074) = N(.0148)
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ZAT 154 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS, UNLOAD AT DISPOSAL AREA, PE
         3 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY, PER PIECE. 4N(.0064) = N(.0256)
         4 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE, PER PIECE (TRAVEL TIME NOT INCLUDE

ZAT 155 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY, PER PIECE, 24N(.0064) = N(.1536),
         3 LOAD USED TIES ON FLAT CAR FOR DISPOSAL, USING CRA
           NE AND TONGS, UNLOAD AT DISPOSAL AREA, PER TIE OR
         4 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE, PER PIECE, 24N(.0074) = N(.1776)

ZAT 156 1 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY, PER PIECE.
         2 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE, PER PIECE (TRAVEL TIME NOT INCLUDE

ZAT 157 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING, UNLOAD BY HAND, PER TIE.
         2 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY. 2N(.0064) = N(.0128)

ZAT 158 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 LOAD HARDWARE FROM STORAGE ON HANDCAR AND UNLOAD O
           N RIGHT-OF-WAY. 4N(.0064) = N(.0256)

ZAT 159 1 LOAD USED TIES OR RAILS ON TRUCK OR FLAT CAR, USIN
           G CRANE AND TONGS. UNLOAD AT DISPOSAL SITE.
         2 LOAD HARDWARE FROM RIGHT-OF-WAY TO HANDCAR AND UNL
           OAD AT STORAGE, PER PIECE. 4N(.0074) = N(.0296)

ZAT 160 1 DISTRIBUTE NEW GRADE TIES ALONG RIGHT-OF-WAY. LOAD
           WITH CRANE AND SLING. UNLOAD BY HAND, PER TIE.
         2 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA, P

ZAT 161 1 DISTRIBUTE SWITCH TIES OR RAILS ALONG RIGHT-OF-WAY
           LOAD AND UNLOAD WITH CRANE AND TONGS, PER SWITCH
         2 LOAD USED TIES ON TRUCK OR FLAT CAR FOR DISPOSAL,
           USING CRANE AND TONGS. UNLOAD AT DISPOSAL AREA,